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ABSTRACT

Taking a report on the effects of cooperative completion of cloze by Jacobson (1990) as its point of departure, this study used English-as-a-Second-Language (ESL) students to investigate the potential of the cloze procedure and of group work for learning, including its usefulness as an instructional or self-instructional procedure for language skills. Cloze procedure involves the deletion of words from a passage of text and the evaluation of the responses supplied by the reader in order to fill in those deletions. The study examined the extent to which gains made in group work were internalized and retained or built upon by individual students, and the potential of the cloze procedure, or group/cooperative work, and of repetition/repeated exposure to a problem in promoting learning in the absence of teacher input. Results suggest a very productive, though not always easy to define, role played by the group work in fostering improved performance, at both the group and later individual stages, among the strongest as well as the less able students. (LB)

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Individual and cooperative completion of cloze

Judith Grant
November 1991

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Individual and cooperative completion of cloze

1. Introduction

The research recorded here took as its point of departure a study undertaken to investigate the effects of cooperative completion of cloze and reported on by Jeanne M Jacobson in the Journal of Reading 33(4) V 1990 244-250.

(a) Jacobson's study

Jacobson had 2 groups of University students complete a cloze passage twice: once individually and once in small groups. Her study sought to answer three questions, viz. when students complete a cloze passage, twice, first individually and then as members of a small group
(1) what is the relationship between the individual and group scores?
(2) specifically: is the group score approximately equivalent to the mean of the individual scores of group members or to the highest individual score? and
(3) does analysis of item responses provide internal evidence that group interaction affects the group score?
After results were obtained she added a 4th question
(4) were group scores equivalent to the average of individual scores moved up a notch: i.e. did each group simply produced a score that was something better than group member's individual scores while maintaining the rank ordering of their scores?

subjects

Jacobson's subjects were 25 graduate and 30 undergraduate US University students enrolled in education courses and familiar with group work and cooperative learning.

procedure

In the context of a class study of the cloze technique the students completed the same cloze passage twice: (a) working independently and taking as much time as they needed to complete it; and (b) working on the passage in the next class session in their cooperative learning groups and completing it as a group.

cloze passage

The passage from which the cloze was constructed was one the students has not read. It was taken from the beginning of an article published in a professional journal and was selected because it dealt with a topic of interest to the two groups of students and was both clearly written and coherent in itself. It had 391 words, excluding from this count the title

and citation which were provided, and was determined to be at a 12th grade level of readability

type of cloze

The form of cloze used was that of the standard cloze (random deletion or every *n*th word). The first and last sentences of the passage were left intact and a blank line of standard length was substituted for every fifth word in the remainder of the passage. A total of 68 words was deleted.

method of scoring

Only exact responses (including spelling errors - *authors/author's*- but not alternative forms of a word - singular for plural, present for past tense etc.) were accepted for scoring purposes.

interpretation of scores

Bormuth (1968)'s criteria as to levels of readability / reading ability (scores of 57+%= within the Independent range ; 44%-57% within the Instructional range; -44% within the Frustration range) were then applied to the scores which were interpreted as indicating degrees of reading comprehension ability.

findings

What was found was a further manifestation of the maxim: "the whole is more than the sum of its parts".

In answer to the general enquiry (viz. (1) ... what was the relationship between the individual and group scores?) it was found that groups outperformed their members with remarkable consistency.

In answer to the second question (viz. (2) ... were the group scores approximately equivalent to the mean of the individual scores of group members or to the highest individual score?) it was found that group scores were not approximately equivalent to the mean of the individual scores of their members:.

(a) 52 of the 55 subjects achieved higher group than individual scores and

(b) every group score was within the Independent range, whereas individual scores had ranged from Frustration to Independent (following Bormuth (1968)'s criteria : 57+%=Independent; 44%-57% Instructional range; -44% Frustration range)

Nor, it was found, were group scores simply equal to the score of their highest scoring member: only 3 (/55 total) subjects had achieved individual scores equivalent to or higher than their group's score and since 2 of these were members of the same group there were only 2 cases (/18 total groups studied) where the highest scoring group

member had outscored the group product. What was more, the 4 groups composed of members with scores at the instructional level or below achieved, along with the other groups, a score at the independent level.

Examination of item responses led to a positive answer to the 3rd question: (viz. (3) does analysis of item responses provide internal evidence that group interaction affects the group score?). Several instances were recorded of group generation of correct (and occasionally incorrect) responses different from all the individual responses of group members. The following were noted as factors contributing to the better scores by the groups: (1) groups produced more responses (i.e. less items left blank); (2) in group products idiosyncratic responses were virtually eliminated; (3) illogical answers did not survive group scrutiny; (4) groups apparently attended to larger chunks of text; (5) groups apparently tended to use every available clue

In answer to the additional question which was posed after the above results had been obtained: (viz. (4): were group scores simply equivalent to the average of individual scores moved up a notch. i.e. did each group simply produce a score that was something better than group member's individual scores while maintaining the rank ordering of their scores?) it was found from comparison of group scores with the mean of the individual scores of group members that there was no significant relationship between the paired scores (i.e. that group results were not merely the equivalent of the average of individual scores moved up a notch).

conclusions

Jacobson concluded that the evidence suggested that group completion of cloze under the conditions used in the study was "apt to yield a better product than individuals' efforts" . She recognised the possibility that what she calls the "opportunity for incubation"- viz the delay between the first and second completions of the passage - might be advanced as a factor causing the improvement. She suggested that replication of the study with students who were less skilled in language use and / or group strategies would yield useful information.

Jacobson presented her findings re levels of reading comprehension and individual and group performance in the 2 Tables reproduced below for comparative purposes with what follows.

TABLE A (Jacobson Study)
Percentages of individual and group cloze scores at 3 levels of reading comprehension

Reading comprehension		Undergraduate		Graduate	
		Individual	Group	Individual	Group
Independent level	57%+	50	100	56	100
Instructional level	44%-57%	40	0	40	0
Frustration level	0-44%	10	0	4	0

TABLE B (Jacobson study)
Summary statistics for individual and group cloze performance

Raw Scores; maximum=68	Undergraduates	Graduates
Individual cloze scores	(n=30)	(n=25)
Range	27 - 48	29 - 50
Mean	37.23	38 84
Standard deviation	5.12	5.79
Group cloze scores	(n=10)	(n=8)
Range	39 - 51	40 - 51
Mean	46.50	45.13
Standard deviation	3.41	3.44

(b). The present study

It was partly the suggestion by Jacobson that her study be replicated with students who were less skilled in language use and / or group strategies, and partly long-standing interest in the potential of the cloze procedure and of group work for learning (self instructional) as well as teaching (instructional) purposes that led to the undertaking, towards the end of 1990, of the investigation reported on here.

This study differed from Jacobson's in two main ways:
(1) its subjects were ESL students, not native speakers of English as in Jacobson; and
(2) a third phase was added with students completing the cloze passage individually once more, after they had worked on it in their groups

2. Cloze procedure and group work

(a) Cloze procedure

Cloze procedure basically involves the deletion of words from a passage of text and the evaluation of the responses supplied by the reader in order to fill in those deletions

Initially established to measure the readability (level of difficulty for the reader) of English texts (Taylor, 1953), cloze has subsequently come also to be used for a wide range of testing and teaching purposes with subjects of varying ages and abilities, in a variety of contexts including, but not limited to, first and second / foreign language .

It is its usefulness as an instructional / self-instructional procedure that is most relevant to this study. Of the many and varied instructional purposes for which is has been used: cf. improving general reading, increasing reading or listening comprehension, developing reading vocabulary, increasing reading speed, improving spelling, increasing knowledge of content subjects, improving the ability to read content area material, cloze has been found to be most effective in developing reading comprehension, or at least some of the skills involved in the comprehension process, and least effective in improving word knowledge or vocabulary (Jongsma, 1980).

Although cloze is viewed by teachers as a user-friendly, flexible and useful tool for teaching, the findings of research into its instructional effect suggest (Jongsma, 1980) that it is no more or less effective than many of the conventional instructional methods that are widely used Studies of its effectiveness with learners of differing ages or levels of reading ability show no clear pattern as to their findings. Jongsma (1980) concludes that cloze instruction is no more or less effective for any one age or level of reading ability than another; nor is there evidence of students having more favourable attitudes towards it than towards other forms of instruction.

There are 2 main forms of cloze : "standard cloze" with random (i.e. every *n*th word) deletion and "modified cloze" with deletions of selected items. Deletions are usually marked by a blank / line of standard length, irrespective of the length of the item deleted,. although a variety of other ways of marking the deletion may be employed, more especially for instructional purposes. While the latter form of cloze is useful for various specific purposes, the standard cloze, simpler to create and to score, has proved a valid, effective and reliable means of assessing comprehension. Research indicates that the results of standard cloze correlate better with standardized achievement tests

than those of modified cloze and that the rankings produced by standardized close do not differ significantly from those of modified cloze (Jongsma, 1971a).

Studies have been made of the completion of cloze passages with deletions ranging from every 5th to every 12th word. Native English speaking readers are, it has been found, stretched by deletion of every 5th item and not challenged by deletion of every 12th (Cripwell 1976). Studies of deletion of every 5th, 6th, 7th, 8th and 10th words indicate that there is no significant difference in the restorability of the deleted item in these amounts of context (Riley, n.d.)

There is a longstanding consensus that for a standard cloze a total number of about 50 deletions will be sufficient to give a reliable estimate of the readability of the passage / reading ability of the reader. Views are less settled when it comes to reliability of results in the context of testing. Sciarone and Schoorl (1989) argue that, for testing purposes, no less than 100 deletions are necessary. in a standard cloze and a minimum of about 75 in a modified cloze in order to ensure reliability.

It is generally accepted that there is no significant difference in the reliability of the two methods by which cloze can be scored : "exact replacement method " and "acceptable alternative method," and that both rank students in virtually the same order. The method used to score a cloze can thus be selected according to the purpose: assessment / instruction (of ability / readability), for which the cloze is being used. It is generally agreed that the acceptable alternative method is particularly useful for instructional purposes.

There has, however, been a certain division of opinion among researchers in the SL(/ FL) area as to the reliability and suitability of these methods of scoring in the SL context Oller and Conrad (1971) and Anderson (1972), for example, supported exact word scoring as being quick, objective, reliable and easier than other methods and producing results in the SL situation that differed little from those produced by the acceptable alternative method.. Oller (1972), however, found the acceptable alternative method to be better for marking cloze ESL proficiency tests in terms of item discrimination and for validating correlations, regardless of the level of the test. Riley (n.d.), for her part, found no significant difference in scoring between the methods when testing overseas graduate ESL students. .

Views differ, too, as to whether completion of a cloze item relates only to the immediate context of the deleted item: i.e clause / phrase level processing (Alderson, 1979), or involves wider, sentence-level

syntactical and cohesive relationships, intersentential ties and lexical selections (Jonz, 1983.). Jonz (1990) concluded, from a review of previous studies and an analyses of 8 published cloze passages ,that cloze measures comprehension ranging beyond the context immediately surrounding the deletion rather than simply comprehension of the immediate environment of the deletion.

There is a similar difference of view as to the related question of whether cloze measures lower level language skills (.cf.Alderson, 1979) or the full range of language abilities, from lower-order phrase processing to complex skills on a scale of lower- to higher-order human language processing capacities (Bachman, 1982 and 1985; Jonz, 1987 and 1990)

The above differences over what it is that cloze measures are echoed by opposing opinions as to its reliability as a procedure. Alderson, who had found cloze insensitive to long range constraint, also considered it unreliable and erratic (cf. Alderson, 1979 and 1980). Others (cf. Bachman, 1982 and 1985; Chavez-Oller et al, 1985; Chihara et al, 1977; Jonz, 1987 and 1990) who had found cloze sensitive to comprehension processes at various levels, including those involved in higher-order language processing, consider cloze a stable and reliable procedure

(b) Readability / Reading ability

The cloze procedure was, as pointed out p.5 above, developed by the journalist Wilson Taylor in order to gauge the readability of texts. (cf. Taylor, 1953).

The readability (level of difficulty) of a text is really the expression from another point of view of the level of reading ability (reading comprehension) of the reader. Measures of readability came to be interpreted also as measures of reading ability and scales were established relating % scores on standard cloze to levels of reading ability defined using terms established by Betts in 1946 using multiple-choice comprehension questions:

Frustration = unable to grasp pattern of meaning of passage although may be able to decode certain parts of the passage successfully
Instructional = able to understand the passage with a certain amount of instruction
Independent = able to understand the passage readily.

These levels apply to standard cloze and are approximately the same for L1 and SL learners (Cripwell, 1976: 59)

While there has been a certain degree of variation among correlations of cloze % scores and levels of reading ability: cf.

	Bormuth 1968	Anderson 1971	Cripwell 1976	Chance 1988
Independent	57%	53%+	50%+	55%+
Instructional	44%-57%	44%-53%	38%-50%	45%-54%
Frustration	-44	-44%	-38%	-45%

the criterion reference scores established by Bormuth (1968) have been widely accepted. They were used by Jacobson for her study and have been used also in the present SL study

(c) Group work

With the shift of approach in language teaching towards fostering communicative competence, group work has been increasingly advocated, adopted, exploited and studied as a productive alternative to / substitute for teacher-centred instruction in a wide range of contexts..

Long & Porter (1985) presented 5 pedagogical arguments for the usefulness of group work in the SL context based on its potential for (1) increasing the quantity of language practice opportunities; (2) improving the quality of student talk; (3) individualizing instruction; (4) creating a positive affective climate in the classroom; and (5) increasing student motivation

They also discuss how research in the area of psycholinguistics has provided strong additional support for the usefulness of group work in SL teaching. Formulation of the "Input Hypothesis" (Krashen, 1980), and work on the role of "comprehensible input" in SLA generated a significant body of research whose findings supported a strong, positive role for group work in SL teaching. Research into the nature and role of interlanguage talk (Porter, 1983, cited in Long & Porter, 1985) and the occasions it offers for quantity of practice, feedback, repair and negotiation for meaning again highlighted the benefits of group work.

Allwright (1981)'s contention that increased learner involvement leads to increased subject matter mastery was echoed by Littlejohn (1983) who concluded from his study of small group tutorless SL learning that increased learner involvement in course management can offer benefits in terms of depth of learning, motivation and attitude toward studying.

While there is some division of view as to whether groups achieve more or at least the same learning without a teacher as with, research findings (cf. Long,1983; Pica et al , 1987) have tended to indicate that teacher facilitated (or led) groups achieve more than self directed ones.

(d) Group work and cloze performance

Studies, prior to that of Jacobson, on the effects of group work on cloze performance focussed mainly on the discussion aspect of group work and on the role and effectiveness of the teacher in leading that discussion. They were relatively few in number and their findings were neither clear-cut nor consistent.

Jongsma (1980:11) reported that, contrary to logical expectations, studies that specifically tested the effects of discussion on cloze performance consistently found that cloze instruction with discussion was no more effective than independent completion of cloze exercises.. He cited four studies (Cox, 1974, Yellin, 1978, Faubion, 1971 and Pessah, 1975) that specifically assessed the effects of discussion, either teacher-led or with the teacher as facilitator, on L1 reading performance. These studies, involving 4th graders or remedial college students, compared the outcomes of independent individual and group (either teacher-led or independent) completion of cloze: . No significant differences were noted in any of the studies for the different treatments.

Other studies (cf. Jongsma, 1980:12), in which discussion, although not tested as an isolated factor, was an integral part of successful cloze instruction, tended, for their part, to suggest that cloze instruction was likely to be more effective with discussion than without. Culhane (1972) (cited in Jongsma, 1980: 13), concluded that teacher-led discussion following a cloze exercise was significantly more effective than student-led discussion.

Jongsma (1980:13) could point to no empirical evidence from studies of various ways of organising groups (large or small, teacher-directed or self-directed, homogeneous or heterogeneous as to levels of ability, age or L1) to suggest that any one type of grouping arrangement was more effective than another for cloze instruction.

3 The present study

(a) Relationship with Jacobson's study

The study was patterned on Jacobson's investigation of the effects on L1 reading performance of cooperative completion of cloze .

It extended Jacobson's 2-Phase (individual followed by group completion of the same cloze) study in two main ways:
(1) its subjects were SL (ESL) students
(2) a third Phase (a further, unannounced, individual completion of the cloze 8 days after the group phase) was added.

All 3 Phases were carried out by the students working independently without any teacher input

In the discussion that follows Phase 1 refers to the initial, individual completion of the cloze, Phase 2 to the subsequent group work and Phase 3 to the final, individual completion of the cloze 8 days later

(b) Purposes

The study has purposes that were immediate, viz. to attempt to

(1) determine whether the process described by Jacobson would lead to similar learning gains with SL students (and thereby to similar answers to the 4 questions posed by Jacobson re the relationship between individual and group scores);

(2) gauge the extent to which whatever gains were made in the group work were "internalised" and retained or built upon by individual students in Phase 3 (i.e. to extend the examination of the effects of group work upon the individual members of varying levels of linguistic ability who had contributed to the one, group product);

and more general: viz. to attempt further to

(3) assess the potential of the procedure / task (cloze) and of the process (group / cooperative work and repeated exposure to the task, with no teacher input) for promoting learning, and lasting learning.at that.

In seeking to determine, through analysis of the results from the additional individual phase (Phase 3), the influence of the group work (Phase 2) upon the language acquisition / performance of the individual members. of those groups it was accepted, as it had been by Jacobson, that these latter results especially would be compromised by the unaccounted for (unaccountable for?) effects of repeated exposure to the same passage.

An attempt was made to neutralise any influence from deliberate memorisation by not informing students that they would be doing a 3rd Phase and by delaying that Phase for 8 days.

(c) Subjects

23 students from 2 Classes participated in the study, 21 of whom satisfactorily completed all three Phases. (Jacobson had worked with 55 students divided into 18 groups)

Class 1: 8 adults (mainly in their early 20s), of mixed level of SL ability, from varied L1 backgrounds, who were taking an intensive English for Further Study programme to prepare them for undergraduate study in a variety of disciplines in English medium tertiary institutions.

Class 2: 15 somewhat older adults (late 20s to mid 40s), of mixed level of SL ability, from varied L1 backgrounds who were taking an intensive, more focussed English for Further Study programme to prepare them for post-graduate study in the one, scientific discipline in an English medium university.

Although Class 1 were undergraduates and Class 2 were graduates the EL proficiency of Class 1 was generally higher than that of Class 2.

By the time they were asked to complete this particular cloze (for both Classes 2 weeks before the end of a 10 week course) the students were well accustomed to participating in group work which had been used extensively in their EFS programmes.

For Phase 2 the 8 members of Class 1 were divided into 2 groups of 4 persons (referred to, in the discussion and Tables below, as Class 1 Group A and Class 1 Group B), the 15 members of Class 2 into 3 groups of 5 persons.(referred to, in the discussion and Tables below, as Class 2 Group 1, Class 2 Group 2 and Class 2 Group 3).

23 students participated in Phases 1 and 2: (8 members of Class 1 and 15 members of Class 2). One member of Class 1 who had participated in Phases 1 and 2 was absent from the final, individual phase (Phase 3). 22 students completed all three phases: (7 members of Class 1 and all 15 members of Class 2) but the Phase 3 score of one Class 1 member had to be discarded because of doubts as to how independently it had been achieved.

Scores are reported (a) per class and (b) as combined totals with Class 1 individual and group numbers adjusted to reflect the changes in class and group size noted above. Thus

(a) Class 1 n =8; but n =6 for comparison with Phase 3 and across all 3 Phases;
Class 1 Groups A and B n =4 ; but n =3 for comparison with Phase 3 and across all 3 Phases;.
Class 2 n =15; and
(b) combined total n = 21 for comparison of Phases 2 & 3 and comparison across all 3 phases; but n =23 when Phase 1 and 2 only are in question

(d) Procedure

The students completed the same cloze passage three times. They were not informed at any stage that they would be asked to complete the passage on a further occasion. and were, on each of the three occasions, allowed as much time as they needed to complete the cloze. There was no teacher input.at any of the three Phases. .

For Phase 1: students completed the passage working individually.
For Phase 2: the following day students were divided into mixed ability, mixed L1 groups and worked cooperatively on completing the passage (1 scribe; one cloze sheet handed in; group members each had a script for convenience and handed this in with group sheet at end of the session).
For Phase 3: 8 days later and unannounced (the classes had thought that Phase 2 was the end of the work on the passage) students were asked to complete the cloze one more time, individually and again in their own time . (It was noticeable that all did Phase 3 in less time: 45 minutes on average, than that taken: approximately 1 hour, for Phases 1 & 2.)

(e) Cloze passage

source, topic and readability

The passage used in the exercise had not been seen before by any of the students. It was taken from the Education Section of "The New Zealand Herald" and dealt with a topic - the Water Cycle - that would, it was considered, be familiar to a wide range of people. The passage was written clearly in non-technical language and formed a coherent, self-contained whole of 434 words, exclusive of the title.

According to the editor of that Section the passage was written with the newspaper's general readership rather than a senior high school readership in mind. Its "readability" was further gauged by having a group of 7 NS (native speaker) adults, of similar ages and educational backgrounds to those of the subjects of the study, complete the cloze The NS % scores ranged from 82 - 46 with most (5 / 7 or some 72%) scoring high in the independent range and the rest (2/7 or some 28%) in the instructional range. None of the NS scored within the Frustration

range. The level of difficulty of the passage was thus somewhat lower than that used for the L1 study.

The passage is printed in Appendix I.

type of cloze

The title and first and last sentences of the text were left intact and a blank line of standard length was substituted for every 7th word, with a total of 50 deletions being made.

Standard cloze (deletion of every *n* th word) was adopted
(a) for comparative purposes (Jacobson had used this);
(b) to "suit" the task in hand (again as determined by Jacobson); and
(c) because it is generally accepted that the rankings obtained by standardized close do not differ significantly from those of modified cloze

Deletions were made of every 7th rather than every 5th word (Jacobson had deleted every 5th word) partly for "cosmetic" (or "psychological") reasons in that more context between deletions would tend to make the cloze appear less daunting to its SL reader, partly because such a deletion rate was in line with those found effective for ESL/EFL students (Cripwell, 1976) and because a long series of studies involving deletion of every 5th, 6th, 7th, 8th and 10th words had established that there was no significant difference in the restorability of items with those amounts of context (Riley, n.d.)

A total of 50 deletions was made (Jacobson had made 68)
(a) for convenience in that the length of the passage fitted well with that frequency of deletions; (b) for ease of interpretation in percentage terms; (c) in the knowledge that Bormuth (1964) had found 50 deletions to be the optimal number for readability research; (e) because of general scholarly acceptance that 50 meets Taylor (1953)'s criterion of "enough" deletions for estimating the readability of a passage and thereby the reading ability of its readers (Riley, n.d.).

method of scoring

The exact-replacement method of scoring was used with only exact responses (including spelling errors: *unavailabed* for *unavailable*, but excluding inflection and tense errors: *fall* instead of *falls*, *stream* instead of *streams*) being accepted.as correct Comparison with Jacobson's results was facilitated by use of this method of scoring which is generally agreed (Jongsma, 1980) to be as reliable and valid as the acceptable-alternative method and is easier and quicker for the marker

(f) Phases 1 and 2: findings

(i) relationship between Phase 1 and Phase 2 scores.

The Phase 2 score of all but 1 of the 23 persons who completed the first 2 Phases was higher than their individual score. The Phase 2 score of this one exception was the same at his Phase 1 score. Cf. TABLE 1, TABLE 2 and TABLE 5 below

TABLE 1: Phase 1 **percentage** scores per Class and Combined

Phase 1:	Class 1 n=8	Class 2 n=15	Combined n=23
score range%	34-66	14-50	14-66
mean score %	49.25	35.46	39.13
median score %	46	38	40

TABLE 2: Comparison of Group (Phase 2) and individual (Phase 1) (mean and range) **percentage scores**

	Phase 2 Group score	Phase 1 indiv score range	Phase 1 mean indiv. score
Class 1 Gp A n=4	66	66-34	50.5
Class 1 Gp B n=4	54	48-34	41.5
Class 2 Gp 1 n=5	54	50-22	37.2
Class 2 Gp 2 n=5	48	46-16	34.4
Class 2 Gp 3 n=5	52	48-14	34.8

The scores achieved by the SL students thus provided the same answer as had Jacobson's L1 students to her first question ("when students complete a cloze passage twice, first individually and then in a small group what is the relationship between the individual and groups scores?") viz. that when students complete a cloze passage twice, first individually and then in a small group, the groups consistently outperform their members.

The scores achieved by the SL students provided the same answer as had her L1 students to Jacobson's second and more specific question ("was the group score approximately equivalent to the mean of the individual scores of the group's members or to the highest individual score?") viz. that there was no equivalence between the individual and group scores

With regard to the first limb of that second question, viz. was there an approximate equivalence between group scores and mean of individual scores of group members (for details of which see TABLE 2 above) the answer was an emphatic no.

With regard to the second limb of the question, viz.was there a relationship between group score and highest score of its members (for details of which see TABLE 2) the answer was in the negative for the 4 out of the 5 groups which produced a score better than that of their best member. In the case of the 5th group (Class 1 Group A) the group score was the same as that of its highest scoring member (Note: Examination of the item responses of that Group and of its highest scoring member shows that the Group's responses did not simply repeat those of that member).

(ii) reading comprehension levels at Phases 1 and 2

When the scores achieved at Phases 1 and 2 are related to levels of reading comprehension (using, as had Jacobson, Bormuth (1968)'s cloze readability criterion reference scores) the outcomes (for which see TABLES 3(a) and (b)) further reinforce the negative responses to Jacobson's questions 1 and 2.

Whereas Phase 1 combined results had the majority (14 /23 or 60.%) of the individual students in the bottom or Frustration level, approximately one third (8/23 or 34.7%) in the middle or Instructional level and only 1 (or 4.3%) solitary student at the Independent level, the scores achieved by the combined groups at Phase 2 reflected a raising by one reading comprehension level of the individual scores: No group scored at the bottom level, one of the five groups (or 20%) scored at the top or Independent level, and the majority (4/5 or 80%) scored at the middle or Instructional level.

The one level improvement in the reading levels achieved by the SL groups was similar to that observed by Jacobson for her groups though at a lower remove. In the L1 study every group score was within the Independent range, whereas individual L1 scores had ranged from Frustration to Independent. In the SL study all group scores were at the Instructional (for the majority) or the Independent levels, whereas the majority of the individual SL scores had been at the Frustration level.

TABLE 3(a): **Percentages per Class** of Phase 1 and Phase 2 cloze scores at 3 levels of reading comprehension

		Class 1		Class 2	
		Phase 1	Phase 2	Phase 1	Phase 2
		n=8	n=2	n=15	n=3
Independent level	57%+	12.5	50	0	0
Instructional level	44%-57%	50	50	26.6	100
Frustration level	0-44%	37.5	0	73.3	0

TABLE 3(b): **Combined percentages** of Phase 1 and Phase 2 cloze scores at 3 levels of reading comprehension

		Class 1& Class 2 combined	
		Phase 1	Phase 2
		n=23	n=5
Independent level	57%+	4.3	20
Instructional level	44%-57%	34.7%	80
Frustration level	0-44%	60.8%	0

(iii).<u>analysis of responses</u>

Item analysis provided an affirmative response to Jacobson's third question ("does analysis of item responses provide internal evidence that group interaction affects the group score?") and did to some extent help explain why it was that the group results were better than individual results

As had been noted by Jacobson for her study of L1 readers, the students in the SL study produced at Phase 2
(a) more answers: out of the total of 250 responses required I noted only 1 blank (i.e. 0.4%)) as against 44 left blank (i.e.3.8%) at Phase 1 out of a total of 1150 responses required (or 37 (i.e. 3.5%) left blank out of a possible 1050 responses) .(Class 2 (n=15) : 35 blanks; Class 1 (n =6) :2 blanks; or (n =8) 9 blanks); and
(b) more correct answers

Of these correct answers
(i) a large number (133 in all of the total group responses of 250) repeated one (or more) their members' Phase 1 correct responses
(ii) a small number (4 in all of the total group responses of 250 or 1.6%) had no antecedent at Phase 1. (cf. TABLE 4 below for all this)

Class 2 Group 1	*falls* 46
Class 2 Group 2	*can* 19
	frozen 30
Class 2 Group 3	*this* 34

TABLE 4: **Relationship** between Phase 2 (group) correct responses and group members' Phase 1(individual) correct responses (/50)

Class 1

Phase 1	Phase 2 Group A (n=4)	Phase 2 Group B (n=4)	(Phase 2) (Group A (n=3)	(Phase 2) Group B) (n=3)
all 4 right	13	11	-	-
3 right	7	6	18	11
2 right	9	5	10	8
1 right	4	5	5	8
Total(/50)	33	27	(33	27)

Class 2

Phase 1	Phase 2 Group A (n=5)	Phase 2 Group B (n=5)	Phase 2 Group C (n=5)
all 5 right	3	3	1
4 right	7	8	10
3 right	8	6	5
2 right	5	2	6
1 right	3	3	3
Total	26	22	25
plus			
self generated	1	2	1
Total (/50)	27	24	26

These responses generated "ex nihilo" (and referred to hereafter as "isoresponses") were all produced by groups from the less able of the Classes (Class 2) whose "whole" (at the group stage) can be seen to have thus produced more than the sum of its "parts" (at the individual stage)

The more frequent occurrence of the same phenomenon among Jacobson's students (37 correct isoresponses (or 3%) of a total of 1224 responses) would seem attributable to the fact that they were generating these new, correct responses from their own, first language

The bettering effect of the group work is observable also in the generation "ex nihilo" of 5 instances of a "more likely" answer (i.e. an acceptable substitute).although this could not be credited in the scoring

Class 1 Group A *falls* for *collects* 43
Class 2 Group 2 *Part* for *Most* 25,
amount for *fraction* 45
in for *during* 48 (BUT 2 members at Phase 1 had had *during*)
Class 2 Group 3 *remains* for *collects* 43

On the downside 11 instances were noted of Phase 2 isoresponses that were neither correct nor could be considered acceptable substitutes for the earlier incorrect responses:

Class A Group A	*Blank* for *frozen* 30
Class 1 Group B	*steady* for *world's* 39
Class 2 Group 1	*process* for *lot* 13
	total for *world's* 39
	melts for *collects* 43
Class 2 Group 2	*measurement* for *lot* 13
	fallen for *falls* 28
	rain for *world's* 39
	rose for *collects* 43
	rivers for *of* 47
Class 2 Group 3	*bring* for *unavailable* 32

Groups also rejected the correct answer of one or more of their members (i) in favour, in 6 instances, of an incorrect isoresponse of their own creation:

Class 1 Group A	*available* (one member) for *unavailabed* 42
Class 1 Group B	*stream* (one member) for *streams* 36
Class 2 Group 1	*lakes* (one member) for *streams* 36
Class 2 Group 2	*always* (one member) for *that* 17
	which (three members) for *and* 18
	clouds (one member) for *it* 33

and

(ii) in favour, in 28 instances, of the incorrect answers of one of more of their members

Class 1 Group A: 3 times (*amounts* 9, *lot* 13, *it* 33)
Class 1 Group B: 3 times (*which* 21, *fresh*31, *and* 35)
Class 2 Group 1: 10 times (*quantity* 3, *amount* 4, *have* 5, *from* 10, *about* 27, *falls* 28, *fresh* 31, *it* 33, *and* 35, *streams* 36)
Class 2 Group 2: 7 times (*quantity* 3, *amounts* 9, *and* 18, *which* 21, *about* 27, *fresh* 31, *and* 35)
Class 2 Group 3: 5 times (*fresh* 31, *and* 35, *the* 37, *ground* 42, *falls* 46)

(iv) <u>relationship of group scores and average of individual scores</u>

As had been the case for the first two questions the answer to Jacobson's 4th (and additional) question ("were group scores equivalent to the average of individual scores moved up a notch.? i.e. did each group simply produce a score that was something better than group member's individual scores while maintaining the rank ordering of their scores?") seems,to be "no" for the SL study as it had for Jacobson's study whether it is mean, top or range of individual scores (cf. TABLE 2 repeated below) that are taken into consideration.

TABLE 2: Comparison of Group (Phase 2) and individual (Phase 1) (mean and range) percentage scores

	Phase 2 Group score	Phase 1 indiv score range	Phase 1 mean indiv. score
Class 1 Gp A n=4	66	66-34	50.5
Class 1 Gp B n=4	54	48-34	41.5
Class 2 Gp 1 n=5	54	50-22	37.2
Class 2 Gp 2 n=5	48	46-16	34.4
Class 2 Gp 3 n=5	52	48-14	34.8

The same group score of 54 was, for example, achieved by both Class 1 Group B with a mean individual score of 41.5 and Class 2 Group 1 with a mean individual score of 37.2. Class 2 Group 2 with a mean individual score of 34.4 and total marks of 172 spread between 46 and 16 achieved a group score of 48 whereas Class 2 Group 3 with a very similar mean of 34.8 and total marks of 174 spread between 48 and 14 achieved a group score of 52. (but see p. 26 below for reassessment of the Group 2 and 3 achievements in the light of Phase 3 results.)

(v) conclusions re Phases 2 and 1

Overall, the SL groups achieved results markedly better than those of their members. Apart from the one student whose score was equalled by the group in which he participated, Phase 2 work produced scores for each group higher than any of their members' individual scores or than the mean of the scores of their members' scores.. Similar results were noted by Jacobson for her L1 groups with 52 / 55 scoring higher at the group than at the individual stage).

The better performance of some SL groups in relation to their members' individual scores did not seem to be related to their members' aggregate, mean or highest individual scores. Jacobson came to a similar conclusion for her L1 groups.

When the SL individual and group scores were interpreted as indications of level of reading comprehension, those achieved at Phase 2 were higher by one level than those achieved earlier by their individual members While a similar improvement by one level had been noted by Jacobson for the group product in her study, the actual levels achieved by the SL students at both Phases were, however, consistently lower by one level that those achieved by the L1 students.

The higher Phase 2 scores of the SL as of the L1 study were the result of the groups having produced more and better answers per question sheet than had the individuals working independently. Generation by the

groups of correct responses "ex nihilo" was a feature noted in both studies but occurred less frequently among the SL than the L1 groups increase in the quality of the answers at Phase 2 was the product mainly of selection from among / rejection / correction of previous responses.

(vi) conclusions re first purpose of the study

The first purpose of this study was to determine whether the process described by Jacobson would lead to similar outcomes among the SL students (and so to similar answers to the 4 questions posed by Jacobson re the relationship between individual and group scores).

Comparison and analysis of individual and group scores shows that the SL groups outperformed their members as the L1 groups had done and that the questions were answered in the same way for the SL and for the L1 students. In the later SL as in the earlier L1 study what groups put out was more than what their members had brought with them to the group . (group output = individual inputs +)

This improvement in the performance of the SL groups was similar in kind to that noted by Jacobson. for her groups though lesser in degree . The difference in the degree of improved performance (learning gains) in the later study would seem in the main to be attributable to the fact that its subjects were SL learners.

(g). Phase 3:

(i) reasons for its inclusion in the study

Jacobson's study concluded that "group completion of cloze ... was apt to yield a better product than individuals' efforts" (Jacobson, 1990:.249) but ended at the group phase and so did not follow up questions relating to the extent / degree of the effectiveness of group work, such as::

did the group improvement last outside the group context?: .

i.e. did the gains reflected in the product of the group work persist and translate into individual gains outside the group situation?

and if they did, then to what degree?

i.e. was the improvement that had been made by the groups subsequently maintained, surpassed or lost, in part or in full, by the individual members?

and among whom?

i.e. could any category of group members be said to have benefited more (or less) than the others from this group work? Had, for example, the better performing members of a group been held back when asked to work cooperatively with lower achieving members?

and how did this come about?

i.e. could a role in fostering any subsequent improvement be ascribed to the group work?

So 8 days later (i.e. a period of time estimated to be sufficient for instant recall to have been dulled and for the effects of short-term memorisation to have worn off) the classes were asked, without prior warning, to do the cloze once more, as individuals, with no teacher input and under the same unrestricted time conditions. Their answers were again scored by the exact response method.

The scores, levels of reading comprehension and rankings achieved at Phase 3 were then compared with those of the earlier Phases, as were the responses and patterns of response for individual students across the Phases, in order to attempt to determine

(1) whether, and if so the extent to which,the gains made by the groups at Phase 2 were retained / interiorised by individual group members at Phase 3 ; and ,thereby eventually to assess

(2) the role played by the group work in fostering independent learning gains, while recognising the difficulties of identifying this role and isolating it from those of incubation, recall and repeated exposure to the one text..

TABLE 5 (a): Percentage scores (on a Class basis) and changes in rank over 3 phases

(a) Class 1

Phase 1 (individual)		2 (group)		3 (individual)	changes		
	n=8	n=2		n=6	rank		indiv.score
KW	66	Gp.A	66	70	1	>1	+
Nicola	54	Gp A	66	60	2	>2	+
Sophia	48	Gp B	54	58	3=	>3	+
Tiffany	48	Gp A	66	54	3=	>4	+
Rita	44	Gp B	54	--	5	>--	
Lee	40	Gp B	54	50	6	>5	+
Nita	34	Gp B	54	44	7=	>6	+
Raymond	34	Gp A	66	--	7=	>-	
mean	46 (368/8)						
	48.33 (290/6)					56 (336/6)	
median	46 (/8)						
	48 (/6)					56	

(b) Class 2

Phase 1 (individual)		2 (group)		3 (individual)	changes		
	n=15	n=3		n=15	rank		indiv. score
Yusuf	50	Group 1	54	60	1	> 1	+
Bao Jin	48	Group 3	52	48	2	> 4	=
Carlos	46	Group 2	48	56	3	> 2=	+
Indrato	44	Group 2	48	40	4	> 9=	-
Bardan	42	Group 3	52	42	5	=> 7=	=
Renato	42	Group 2	48	42	5	=> 7=	=
Jorge	40	Group 1	54	36	7	>12=	-
Moises	38	Group 3	52	46	8	=> 5=	+
Julio	38	Group 2	48	52	8	=> 2=	+
David	32	Group 3	52	38	10	=>11	+
Gonzalo	32	Group 1	54	46	10	=> 5=	+
Edgardo	28	Group 2	48	40	12	> 9=	+
Hugo	22	Group 1	54	36	13	>12=	+
Sun	16	Group 2	48	30	14	>15	+
Toto	14	Group 3	52	32	15	>14	+
mean	35.46 (532/15)					42.93(644/15)	
median mark	38					42	

TABLE 5 (b): **Combined** (n=21) **percentage scores** and changes in rank **over 3 phases**

Phase 1 (individual)		2 (group)		3 (individual)	changes rank indiv score	
	n = 21	n = 5		n = 21		
KW	66	Gp.A	66	70	1 > 1	+
Nicola	54	Gp A	66	60	2 > 2 =	+
Yusuf	50	Group 1	54	60	3 > 2=	+
Sophia	48	Gp B	54	58	4= > 4	+
Bao Jin	48	Group 3	52	48	4= > 9	=
Tiffany	48	Gp A	66	54	4= > 6	+
Carlos	46	Group 2	48	56	7 > 5	+
Indrato	44	Group 2	48	40	8 >15=	-
Bardan	42	Group 3	52	42	9= >13=	=
Renato	42	Group 2	48	42	9= >13=	=
Lee	40	Gp B	54	50	11=> 8	+
Jorge	40	Group 1	54	36	11=>18=	-
Moises	38	Group 3	52	46	13=>10=	+
Julio	38	Group 2	48	52	13=> 7	+
Nita	34	Gp B	54	44	15 >12	+
David	32	Group 3	52	38	16 =>17	+
Gonzalo	32	Group 1	54	46	16 =>10=	+
Edgardo	28	Group 2	48	40	18 >15=	+
Hugo	22	Group 1	54	36	19 >18=	+
Sun	16	Group 2	48	30	20 >21	+
Toto	14	Group 3	52	32	21 >20	+
mean	39.14(822/21)			46.6 (980/21)		
median	40			46		

(ii) relationship between Phase 3 and Phase 1 scores

Phase 3 scores presented a picture of general improvement over Phase 1 scores, though one more complicated than and not as consistent as that presented by Phase 2 in relation to Phase 1. Cf. TABLES 5(a) and(b) for details on a Class and combined basis..

16 of the 21 students improved at Phase 3 on their Phase 1 scores and, of these, 5 improved also on their Phase 2 scores. The number of additional correct items (/50) at Phase 3 varied from +2 to +9 with +9 items being achieved at Phase 3 by the lowest scoring member at Phase 1. The differences between correct items (/50) at Phase 3 as against Phase 1 ranged from -2 to +9

Class 1

All students in Class 1 and two students in that Class scored higher at Phase 3 than at Phases 1 or 2

Class 2

The majority (10/15) of members of Class 2 bettered at Phase 3 their Phase 1 scores. This improvement in scores at Phase 3 was achieved more consistently by the weaker (i.e. those with scores below the class median at Phase 1) and the strongest students. Students with Phase 1 scores falling in the upper middle-range (i.e. above the class median) showed less consistent improvement. Some, indeed, scored lower at Phase 3 than in the earlier Phases. Three members outscored at Phase 3 both their Phase 1 and Phase 2 results; 7 members outscored at Phase 3 their Phase 1 results but scored less than at Phase 2; 3 members equalled their Phase 1 scores, and thus scored lower than at Phase 2; 2 members scored lower at Phase 3 than at either Phase 2 or Phase 1.

The greatest increases in scores at Phase 3 (whether those increases are calculated as a % of the Phase 1 score, or as the difference between final %scores or aggregate numbers of correct responses) were achieved by the lowest scoring members of Class 2, one of whom more than doubled his Phase 1 score from 14 % to 32% i.e. by 9 items over and above an original 7 items correct.

Those whose Phase 3 scores remained the same as or fell below their Phase 1 scores all came from Class 2. and all had, at Phase 1, scored higher than the Class median:of 38. and at, or above, the combined median of 40. Each Class 2 Group had at least one member who failed to increase his Phase 1 score.at Phase 3

(iii) levels of reading comprehension at Phase 3

There was a general improvement in levels of reading comprehension achieved at Phase 3 over those achieved at Phase 1, although a slipping

back, especially in the middle or instructional level from the attainments at Phase 2. Cf. TABLE 6(b) below for combined results..

Comparison on a class basis (for which cf. TABLE 6(a) below) shows Class 1 achieving greater improvements at Phase 3 than Class 2, with no members at the Frustration level, 50% at the independent level and 50 % at the instructional level, thus maintaining its Phase 2 results. Class 2 showed increases at the independent level (from no member to 1 member) and at the instructional level, with a corresponding decrease at the Frustration level.

Thus, although the combined class results in respect of levels of reading comprehension at the instructional and Frustration levels (cf. TABLE 6(b)) were not as good as those which had been achieved at Phase 2, Phase 3 outcomes did reflect a maintenance of the Phase 2 increase at the top or independent level.as well as an improvement at all levels over the Phase 1 results.

TABLE 6(a) **Percentages** (on a **Class basis**) of individual and group cloze scores at 3 levels of reading comprehension

		Class 1				Class 2		
		phase 1	2	3	phase 1	2	3
		n=8	n=6	n=2	n=6	n=15	n=3	n=15
Independent level	57%+	12.5	16	50	50	0	0	6.6
Instructional level	44%-57%	50	50	50	50	26.6	100	33.3
Frustration level	0-44%	37.5	33.3	0	0	73.3		60

TABLE 6(b): **Percentages** (on a **combined basis**) of individual and group cloze scores at 3 levels of reading comprehension

		Phase 1		Phase 2	Phase 3
		n=23	n=21	n=5	n=21
Independent level	57%+	4.3	4.7	20	19
Instructional level	44%-57%	34.7	33.3	80	38.1
Frustration level	0-44%	60.8	61.9	0	42.8

(NB. for the purposes of comparison with Phase 3, Phase 1 should taken as n=21 which includes the scores only of those members who participated also at Phase 3)

(iv) <u>rankings at Phases 3 and 1</u>

Whereas for Class 1 individual rankings at Phases 1 and 3 remained the same, in Class 2 (n=15) there were 14 changes in ranking at Phase 3 with shifts of as much as 6 positions up and 5 positions down.(cf. TABLE 5(a)) For the classes combined there were 17 shifts of as much as 7 positions down and 7 up (cf. TABLE 5(b)).

(v) relationship between Phase 2 and 3 scores

Investigation of among whom and to what extent the improvements in scores (and thereby levels of reading comprehension) achieved at Phase 2 were surpassed, maintained, or lost at Phase 3 (cf. TABLE 5(a) and (b)) for details) proved a complicated exercise,.leading to findings that tend to be disjointed and are not always particularly illuminating.

re individual students

5 students scored higher at Phase 3 than had at Phase 2 the groups of which they had been members . 4 of these 5 had been the highest ranking members, on Phase 1 results, of their group. The 5 ranked in the top 3rd of the combined classes.at Phase 3.

The other 16 students scored lower at Phase 3 than at Phase 2..

re groups

Of the 5 groups 4 had at least one member (2 members in the case of Class 2 Group 2) outscore them at Phase 3. and 1 only (Class 2 Group 3) was not outscored at Phase 3. by at least one of its members

All members of Class 1 groups scored higher at Phase 3 than they had at Phase 1, whereas at least one member of each Class 2 group failed at Phase 3 to increase his Phase 1 score. The biggest increases over Phase 1 scores were achieved by the lowest scoring group members at that Phase.

While on Phase 1 and 2 results it might have seemed that Class 2 Group 3 was more productive than Class 2 Group 2 (cf. p.19 above), not only did it eventuate that, at Phase 3, Class 2 Group 3 was the only group not to be outstripped by one of its members; its two highest scoring members failed to improve at Phase 3 on their earlier individual scores. Findings re the transmission of isoresponses at Phase 3 (cf. p.27 below) would seem to confirm a relatively low "productivity" for this group.

(vi) item analysis

Examination of the responses at Phase 3 shows that students working on their own at that Phase produced (a) more answers and (b) better answers (with better taken to include both exact and acceptable alternative responses) than they had at Phase 1..

re quantity of responses

Cf. a total over both Classes (n=21 with Class 1 n=6) of only 14 items left blank at Phase 3 as against 37 at Phase 1. It must also, however, be noted that in 2 individual cases (Renato and Sun from Class 2) the number of unanswered items increased from 1 and 8 respectively at Phase 1 to 4 and 10 respectively at Phase 3.

re quality of responses

Cf. the total over both Classes (n=21 with Class 1 n=6) of 490 exact responses (/1050) at Phase 3 as against 411(/1050) at Phase 1. For acceptable alternatives see discussion below.

(vii) Phase 2 and improvement in quality of responses

Analysis of responses across all 3 Phases points up the role played by Phase 2

(1) in refining Phase 1 responses, with the refinement maintained at Phase 3 ; cf.re tense / verb morphology

		Phase 1	Phase 2	Phase 3
cf.for *falls*28	Yusuf	*fallen*	*falls* ›	*falls*
for *falls*46	Sophia	*fall*	*falls* ›	*falls*
	Hugo	*fell*	*falls* ›	*falls*

(2) and quasi-refining Phase 1 responses, with the Phase 2 refinement echoed, but not exactly, at Phase 3: i.e. either the form is remembered but with faulty grammar

		Phase 1	Phase 2	Phase 3
cf.for *nearly*7	Tiffany	*but*	*nearly*›	*near*
for *falls*28	Tiffany	*absorbed*	*falls*›	*fallen*

or the sense of an (acceptable alternative) refinement is remembered. For refinement through error at 3 stages

	Phase 1	Phase 2	Phase 3
cf.for *collects* 43 ZBJ	*reserves*	*remains*	*stays*

(3) in creating responses (correct and incorrect) "ex nihilo" For discussion of Phase 2 isoresponses cf. pp.16 ff. above.

(viii)Phase 3 and isoresponses old and new

When the 4 correct isoresponses that had been generated at Phase 2 were traced into the Phase 3 responses of the members of the Groups that had generated them it was found that, of the 4, only 3 had survived at Phase 3 and each had occurred once only in the responses of a high scoring (at Phase 1) member of the Group: viz..

falls 46 (Class 2, Group 1 n=5) repeated at Phase 3 only by the group's top scoring member

can I 9 (Class 2, Group 2 n=5) repeated at Phase 3 only by the group's 2nd highest scoring member

frozen 30 (Class 2, Group 2 n=5) repeated at Phase 3 only by the group's top scoring member (

this 34 (Class 2, Group 3 n=5) not repeated at all . Cf. p.26 for other indications at Phase 3 that this was the least productive Group of all).

In contrast to this "diminishing" at Phase 3 of a Phase 2 creative gain, the 21 students produced at Phase 3 a total of 303 (/1050) fresh isoresponses i.e. responses different from those given at Phases 2 and 1. While most by far of these Phase 3 isoresponses were incorrect (276 / 303 or some 90%) as had been the case with a similar proportion of the Phase 2 isoresponses (22/26 or some 8% incorrect), 27 of them were both created "ex nihilo" and correct.

(ix) Response patterns across the 3 Phases

The patterns of the responses each student across the 3 Phases (Class 1 n=6; 21 students x 50 patterns = total of 1050 patterns) and the frequencies of these patterns were studied in order to see whether they might provide insights into the relationship of Phase 3 and the preceding Phases and, switching the direction of the focus, into the extent and nature of the influence of Phase 2 on the later Phase.

The following patterns and frequencies were noted : (NB: + represents a correct response, = an incorrect response / blank occurring more than once over the 3 Phases and - an incorrect response / blank that was not repeated at another Phase).

187 instances where Phase 3 echoes Phase 2 but not Phase 1; i.e. where Phase 2 might be considered to have influenced the answers at Phase 3

- + +	95 "for the good"	Phase 1 wrong	Phases 2 + 3 correct
+ = =	9 "for the bad"	Phase 1 correct	Phases 2 + 3 wrong
- = =	83 inconclusive	Phase 1 wrong	Phases 2+3 new error

121 instances where Phase 3 followed Phase 1 and not Phase 2 ; i.e. cases of ?failure of Phase 2 to influence Phase 3 / ?"rejection" of Phase 2 at Phase 3 in favour of Phase 1

+ - +	27 "for the good"	Phase 2 wrong	Phases 1 + 3 correct
= + =	33 "for the bad"	Phase 2 correct	Phases 1 + 3 wrong
= - =	61 inconclusive	Phase 2 wrong	as were Phases 1 + 3

62 instances of Phase 3 isoresponses where Phases 1 and 2 had had the same response; i.e ?rejection of /?failure to follow Phases 2 and 1 at Phase 3

= = +	7 "for the good"	Phase 3 correction of 1+2 error
+ + -	22 "for the bad:	Phase 3 new error where 1+2 correct
= = -	33 inconclusive	Phase 3 new error where 1+2 incorrect

241 cases where responses at each Phase were different and where, therefore, the Phase 3 response was an isoresponse, independent of (not reflecting / not influenced by) those of each of the earlier Phases

- - +	20 "for the good:	Phase 3 correct; Phases 1 + 2 each wrong
- + -	73 "for the bad"	Phase 3 fails to follow Phase 2 correct
+ - -	10 "for the bad"	Phase 3 +2 each wrong; Phase 1 correct
- - -	138 inconclusive	Phases 3, 2+ 1 all wrong and different

439 cases of the most frequent pattern of all: the same answer repeated at all 3 stages

+ + +	343	all 3 Phases the same correct response
= = =	96	all 3 Phases the same incorrect response

re Phase 2

Influence of Phase 2 on Phase 3 could be isolated from that of Phase 1 in 308 (or some 30%) of the 1050 patterns.

In 187 (or some 18% of the 1050 total patterns) of the 308 it was the Phase 2 and not the Phase 1 answer that was followed at Phase 3. The Phase 3 preference for the Phase 2 response may reflect influence of Phase 2 on 3, to varying effect:

viz 95 x (- + +) "for the good"; 9 x (+ = =) "for the bad";
and 83 x (- = =) inconclusive

Conversely ,in 121 (or some 12% of the 1050 total patterns) of the 308 the Phase 2 response was rejected at Phase 3 and the Phase 1 response was, instead, adopted, again to varying effect:

viz. 27 x (+ - +)"for the good"; 33 x (= + =)"for the bad";
and 61 x (= - =) inconclusive

The other patterns are not such as to permit Phase 2 answers to be isolated from those of from Phase 1 in this way.

(x) Conclusions re Phase 3 outcomes ,

re improvements

Analysis of scores and responses at Phase 3 provided evidence of further improvement in levels of reading comprehension and in individual scores. over those achieved at Phase 1, and ,.at times, at Phase 2 as well.

Improvement in individual scores was noted more especially among students at the lower and upper achievement levels, with the highest-scoring members of the classes surpassing at Phase 3 their Phase 2 as

well as their Phase 1 scores. and the lowest-scoring members achieving at Phase 3 the most marked improvements upon Phase 1 scores

Rankings established at Phase 1 for Class 1 were maintained unchanged at Phase 2. whereas in Class 2, as in the classes combined ,there were frequent and quite significant shifts in rank at Phase 3 from those set at Phase 1(cf. TABLES 5(a) and (b).).

There was a general improvement in levels of reading comprehension achieved at Phase 3 over those attained at Phase 1, but a slipping back, especially in the middle or instructional level, from the attainments at Phase 2. (Cf. TABLES 6 (a) and 6(b)). The Phase 2 increase at the top or independent level.was maintained in the combined class results at Phase 3; however the combined Phase 3 outcomes at the instructional and Frustration levels (cf. TABLE 6(b)) were not as good as those which had been achieved at Phase 2.

re influence of Phase 2

The attempt to determine through examination of responses and patterns of response across the Phases the manner in which gains made at Phase 2 were maintained and even built upon in individuals' responses at the later Phase resulted in findings that did indicate influence of the group upon the later phase but were largely inconclusive The quality of the influence was mixed but was more "for the good" than "the bad".

re innovation at Phase 3

Not all the improvement at Phase 3 can, it would seem, be traced back to gains made at Phase 2. Instead it can be attributed to further creative activity at the third Phase.

The numbers of isoresponses generated at Phase 3 would seem to reflect (a) increased independent activity at that phase with more isoresponses generated in relation to the total responses: cf.

Phase 2	26 isoresponses or some 10%	of 250 total ;
Phase 3	303 isoresponses or some 28%	of 1050 total

(b) better independent activity in the sense of more correct responses at the third phase. Although examination of the quality of the isoresponses at Phases 3 and 2 indicates a lower proportion at Phase 3 of correct to incorrect isoresponses

Phase 2	4 isoresponses correct	or some 15%	of 26 total
Phase 3	27 isoresponses correct	or some 9%	of 303 total

the proportion of correct isoresponses to correct total responses overall was much higher at Phase 3 than at Phase 2:

Phase 3	27 isoresponses correct	or some 6.6%	of 490 total
Phase 2	4 isoresponses correct	or some 3 %	of 137 total

This increased activity at Phase 3 may be the product of cerebration, incubation, increased confidence, familiarity with the text; alternatively it may be the chance outcome of panic, frustration or a shot-gun approach to fulfilling the task. The effectiveness of the activity would tend to mitigate against chance as its source.

4. Conclusion

This study was undertaken with 3 purposes in view :viz. to attempt

(1) to determine whether the process described by Jacobson would lead to similar learning gains with SL students;

(2) to gauge to what extent any gains made in the group work were "internalised" and either retained or built upon by individual students (i.e. to examine further the effects of group work upon the individual members of differing levels of ability who had combined to produce the one, group product); and

(3) to assess the potential of the cloze procedure, of group / cooperative work and of repetition / repeated exposure to a problem in promoting learning. and lasting learning.in the absence of teacher input.

re (1): Jacobson's procedure and SL learning gains

The present study found that the (2-phase) procedure followed by Jacobson with the L1 subjects produced similar improvements, at the group phase, in scores and reading levels.among the SL students. Although the increases in scores and reading levels noted for the SL groups were not as high as those recorded by Jacobson's L1 groups they nevertheless reflected a markedly better performance by the SL students at the group phase, in the absence of any teacher input.

re (2): retention / extension of group learning gains

While findings relating to this area of the study were less clear-cut than for the first, they did in the main reinforce the overall picture of continuing improvement.in performance, in the absence of any teacher input. Increases in scores at Phase 3 were not as consistent as those noted at Phase 2 nor were the levels of reading ability as high Nevertheless,. the scores (with very few exceptions) and the reading ability levels achieved at Phase 3 were higher than those that had been attained at Phase 1. The gains that were made, and they were marked gains, occurred mainly at the two extremes of the ability range. Failure to make gains and even loss of ground relative to Phase 1 occurred among a minority of students in the upper middle range.

re (3): potential of the process: (group work), and the procedure: (cloze)

Three main variables were at work in producing the the learning gains noted in this study:

the task / procedure (cloze),
the process (group work).and
the subjects.

Inherent within each of these are factors that clearly contributed to the learning gains achieved without any teacher input: cf. the task / procedure (= cloze which involves students in deploying higher level skills); the process (repetition and variation through alternating individual and group work with reworking, refining and repair through negotiation, peer interaction in the cooperative learning stage); and the subjects (personalities, learning styles, stage of development of their interlanguage and even degree of learning potential available to be developed).

While it was not possible, within the limits of this study, to distinguish and weigh the respective roles of these variables, examination of individual responses across the phases did point up the very productive, though not always easy to define, role played by the group work in fostering improved performance, at both the group and later individual stages, among the strongest as well as the less able students.

suggested modifications for further learning / teaching exploitation

The process followed in the study might well be truncated for classroom purposes by omitting the first individual phase and starting at the group phase, given that the group results were so much better than the initial, individual efforts Teacher intervention might also be introduced, given research findings as to the benefits of instruction (Long, 1983), preferably as a follow up to the group or the subsequent individual phase in order not to stultify the creative and innovative power demonstrated by subjects of this study working as they had without any teacher input.

Appendix 1

The water cycle.

Mammals such as seals and whales swallow some seawater when they feed, but humans and other land animals cannot drink it because it contains too much salt.

Seawater contains about 25 grammes of _____ in every litre. This equals more _____ 6 teaspoonsful. If you measure this _____ you will be surprised by the _____ and understand why our kidneys would _____ difficulty removing so much from the _____ .

Yet, although we cannot drink seawater, _____ all our drinking water comes from _____ sea. Sun and wind evaporate huge _____ of water from the sea and _____ lakes, rivers and land plants every _____ . Worldwide nearly 1400 cubic kilometres of _____ evaporate each day.

This is a _____ of water. Just 1 cubic metre _____ water equals 1000 litres .So just 1 _____ kilometre equals one thousand billion litres, _____ equals 1,000,000,000,000 litres.

The water vapour _____ evaporates from liquid water on land _____ in the sea forms clouds. These _____ be clouds of water droplets or _____ crystals, depending on the altitude at _____ they form. Under certain conditions the _____ droplets fall back to earth as _____ and the ice crystals may fall _____ snow or hail in cold regions. _____ of the water that evaporates from _____ sea falls back into it, but _____ 10 per cent is blown over and _____ onto the land.

Around the Arctic _____ Antarctic polar regions falling snow remains _____ , adding to the vast reservoir of _____ water that is locked up and _____ for use. Elsewhere in the world _____ melts or falls as rain and _____ running fresh water fills our lakes _____ reservoirs and is the source of _____ and rivers. But much of it seeps deep into _____ ground, too deep to be recovered. _____ is estimated that of all the _____ fresh water 77 per cent is locked _____ in polar ice caps and glaciers; 22 _____ cent is locked deep in the _____ and only 0.5 per cent flows or _____ on the land surface where we _____ conveniently use it.

Even this small _____ is not fully usable because rain _____ unevenly throughout the year and much _____ it runs straight back to sea _____ wet seasons. And so it is _____ the water cycle can start all _____ again with evaporation forming clouds and clouds rain or hail or snow. ..

The quantities of water involved in the seawater to fresh water cycle are massive yet probably only a third of surface fresh water can be considered accessible and available for man's use.

1 salt
2 than
3 quantity
4 amount
5 have
6 bloodstream
7 nearly
8 the
9 amounts
10 from
11 day
12 water
13 lot
14 of
15 cubic
16 which
17 that
18 and
19 can
20 ice
21 which
22 water
23 rain
24 as
25 Most
26 the
27 about
28 falls
29 and
30 frozen
31 fresh
32 unavailable
33 it
34 this
35 and
36 streams
37 the
38 It
39 world's
40 up
41 per
42 ground
43 collects
44 can
45 fraction
46 falls
47 of
48 during
49 that
50 over

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